

THE PEARL FISHERIES OF THE PERSIAN GULF

Richard LeBaron Bowen, Jr.

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THE MOST COLORFUL and widely publicized marine activity of the Persian Gulf is pearl fishing. Since time immemorial the Persian Gulf has been noted for its pearl beds, and Bahrein Island has always been famous for the best pearls. Virtually every ancient and early geographer or traveler writing about the Persian Gulf mentioned pearls and Bahrein Island. An ancient cuneiform tablet found at Ur of the Chaldees, and dated about 2000 B.C., refers to "a parcel of fish-eyes" from Dilmun; some scholars have interpreted this to mean pearls from Bahrein Island. Pliny, writing in the first century A.D., states that Tylos (the classical name for Bahrein Island) "is famous for the vast number of its pearls." *The Periplus of the Erythraean Sea*, written by a Greek sailor about 60 A.D., mentions the Persian Gulf, "where there are many pearl fisheries." An Arab writing in 1050 A.D. states that "pearl fishing is carried on in the sea of Bahrein." In 1583 Ralph Fitch, an English merchant, visited the then famous island of Hormuz in the Persian Gulf and stated that there were "great stores of pearls which came from the Isle of Baharim, and are the best pearls of all others." Such a continuous record of fame is certainly extraordinary. If the "parcel of fish-eyes" sent to the Babylonians was actually pearls, it recorded the start of a continuous 4,000 years of testimony as to the quality of the Persian Gulf product.

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The factors governing the value of a pearl are multitudinous

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000 and set by arbitrary standards. A first grade pearl should have a perfect "skin," i.e., be free from flaws and specks, and should have a fine "orient," that is, a delicate texture of translucent pink or cream color with an iridescent luster. It is difficult to say whether the size, shape, or color of a pearl is the more important. Other qualities being equal, a perfectly symmetrical pearl is more desirable than a pear-shaped or a flat one. There are pearls of all colors — white, black, gray, green, yellow, gold, and pink. The size of the pearl is important only in combination with a desirable color and shape. Luster is probably the most important characteristic of a first-class pearl; other qualities can be more or less lacking if the pearl has good luster or depth. The most perfect pearl in existence is said to be one in the Zosima Museum in Moscow, known as "La Pellegrina," weighing 28 sarats. The largest known pearl is an irregularly shaped one in the Victoria and Albert Museum, having a circumference of 4.5 inches.

The value of a really rare pearl increases by leaps and bounds from purchaser to purchaser. A single example is a Persian Gulf pearl purchased by Barbara Hutton for \$75,000; the pearl originally sold for \$30,000. It is not necessarily on the spot where the pearl is produced that it is most cheaply procured, and if procured, of the finest quality. Arabs in the Persian Gulf know that the Best Gulf pearls may be purchased most cheaply in India. Peddlers may be found in most towns on the Persian Gulf with necklaces of Gulf pearls for sale; however, these have usually been imported from Bombay.

VALUE OF PERSIAN GULF PEARLS

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439 The annual value of the Persian Gulf pearl fisheries is difficult to estimate exactly, as there are no published figures and the season's crop is not shipped out through any single port. Figures published by some authors are actually only the value of the pearls passing through Bahrein Island. However, as close to 90 percent of the Gulf pearls do pass through Bahrein, these figures give a rough estimate. The earliest figure known dates back to the early 19th century; Wilson stated in 1833 that the value of the pearls produced at Bahrein amounted to from £200,000 to £240,000, while the value of the whole fisheries was about

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£300,000.¹ Wellsted stated that in 1835 the total value was 228
£400,000.² Zwemer stated that the value of pearls shipped from 439
Bahrein in 1896 was £303,941.³

Cox gives the value of pearls exported in 1925 as £220,000 from Bahrein and £9,000 from Lingeh in Iran, and for 1926 as £192,000 from Bahrein, £11,000 from Kuwait, and £5,200 from Lingeh (a total of about £208,000 for 1926); Cox further states that the true value was probably ten times these figures, for reasons he fails to clarify.⁴ However, Thornburg has accepted this last statement of Cox's as a fact and has arrived at a figure of \$10 million for the value of the Bahrein fisheries in 1926,⁵ a figure that is unreasonably high. Thornburg estimates that in the years immediately following World War II the value of the Bahrein pearl fisheries was about \$250,000; Kruegar states that in 1949 the value of the Bahrein pearl fisheries amounted to \$200,000.⁶ Rihani gives figures for the whole Gulf which amount to about \$15 million,⁷ the most absurd value published.

A summary of the more reliable figures would seem to be as follows:

1830's	\$1,500,000
1835	2,000,000
1896	1,500,000
1925	1,200,000
1926	1,000,000
1946	250,000
1949	200,000

As can be seen from the above table, the value of the fisheries 228
dropped to only a fraction of its previous value after the world 439
depression of the thirties. It should also be pointed out that due to 435
world inflation the figure of \$200,000 for 1949 represents less than
\$100,000 on 1926 monetary standards. However, while the de-
pression dealt the Gulf pearl fisheries a devastating blow, its

¹ D. Wilson, "Memorandum Respecting the Pearl Fisheries in the Persian Gulf," *Geographical Journal*, III (1883), p. 284.

² James R. Wellsted, *Travels in Arabia* (London, 1838), p. 264.

³ Samuel M. Zwemer, *Cradle of Islam* (New York, 1900), p. 100.

⁴ Percy Z. Cox, "Persian Gulf," *Encyclopedia Britannica* (Chicago, 1946), vol. 17, p. 605.

⁵ Max Thornburg, "Bahrein," *Encyclopedia Americana* (New York, 1949), vol. 3, p. 43a.

⁶ H. C. Kruegar, "Bahrein," *Collier's Encyclopedia*, II (New York, 1949), p. 668.

⁷ Asien Rihani, *Around the Coasts of Arabia* (London, 1930), p. 275.

228 continued decline cannot be laid at its door. Japanese cultured
439 pearls first started to appear on the market in quantities in the
435 twenties just before the depression. As time has gone on the competition they offered has tended to become less and less, but on the other hand, the world demand for this gem has reached an all-time low, mainly because of the effect of the cultured pearl.

228 The introduction of cultured pearls and artificial pearls alike
435 has had far-reaching effects on the natural pearl market. While they do not compete insofar as price is concerned when they are recognized as cultured, it takes an expert to distinguish them. Thus, the net effect of cultured pearls, and even more so of the expertly fabricated synthetic pearls, has been to cheapen the pearl as a precious gem in the eyes of those who wear them. There are actually some women who prefer cultured pearls, which are usually more uniform. As a result, natural Gulf pearls do not bring a tenth of what they did a quarter of a century ago at Bahrein.

228 It is a strange fact that even though a cultured pearl is worth only a few percent of the value of real pearls, there are few pearl merchants in the Persian Gulf who can tell a good cultured pearl from the Gulf pearl without destroying the two in the effort.* Radiography (x-ray), x-ray diffraction, fluorescence under x-ray radiation, or specific gravity determinations, alone or in various combinations, may be used to detect cultured pearls, but these physical tests are not used by the Arabs for obvious reasons.

228 One might ask why cultured pearls have not been "introduced"
656 into the Persian Gulf pearl market by divers, captains, or merchants. The Arab will tell you that this is improbable. The importation of cultured pearls into the Persian Gulf is prohibited, and in fact carries a severe penalty. The oysters are opened in sight of the divers, so they all know how many exceptional pearls the *nakhoda* (captain) receives and thus what exceptional pearls

* One of the world's leading authorities on the differentiation of cultured and natural pearls by their physical properties, Dr. A. E. Alexander, visited the Persian Gulf in 1947 to study the pearl fisheries and took with him a number of fine cultured pearls which he showed to a group of about thirty Bahrein pearl dealers. These Arabs had never seen a cultured pearl, whose importation is normally prohibited, and were astounded at its quality.

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the owner in turn receives. Such fraud as the introduction of cultured pearls, if detected, would bring out the headman's ax, for Arab laws are severe in this respect. But as there are always people willing to make a dishonest dollar or rupee—and the Arabs are certainly no exception—it is inconceivable that cultured pearls, carefully chosen for their similarity to Gulf pearls, have not at times been smuggled into the Persian Gulf. If the Arab merchants cannot detect them, there are probably few experts who could without the aid of delicate and elaborate electrical instruments. 228 656

OYSTERS AND OYSTER BEDS

Arab lore in the Gulf relates that the young shell-less oysters come to the surface when it is raining, or when the moon is full. The raindrop is the father of a good pearl and the oyster the mother, while the moon produces luster. A poor season is attributed by many to a shortage of rain. Al-Qazwini, author of *The Wonders of Creation*, gives a different version: the north wind carries a mist containing a viscid substance similar to mercury from the Caspian Sea to the Gulf; the oysters draw in this substance, a large drop forming a large pearl.* But every Arab has his own explanation of the phenomenon, and believes that the true scientific explanation is just fantasy. 925

According to O'Shea, three types of pearl oysters are found in the Persian Gulf, known to the Arabs as *mahharah*, *zanniyah*, and *sadaifiyah*. The *mahharah* are the commonest, growing to two or three inches in diameter, and producing 98 percent of the pearls found in the Gulf. The *sadaifiyah* is a rare find and seldom yields pearls; it grows to great size (six to eight inches in diameter) and is often collected for its mother-of-pearl. The *zanniyah* is found in the vicinity of the Ras al-Khaymah in Oman; no details of this oyster are given. In the Red Sea two varieties are commonly found: the large oyster, known as the *balbil*, and the small, known as the *sadaf*. The pearl itself is known as *lulu* to the Arabs in the Persian Gulf, irrespective of the species of oyster from which it comes, while the Persians know it as 228

* A. Rihani, *op. cit.*, p. 277.

● 228 *mawarid*. O'Shea relates that in Oman the pearl is commonly referred to as *qumash*, which is also Arabic for "material" or "goods."¹⁰

228 133 Pearl-bearing oysters are found in most of the Persian Gulf waters in depths varying from just below low tide to 20 fathoms. On the Persian side of the Gulf the bottom falls off rapidly to the 50-fathom maximum in the Gulf. On the Arabian side the bottom slopes off gently so that there are extensive areas within the 20-fathom limit. Thus, there are few pearl oysters on the Persian side, although fine pearls have been reported from near Kharraq Island off Bushire, and from Lingeh, but these are exceptions. However, extensive pearl beds are found along the Arabian side, stretching almost continuously for 700 miles from near Ras al-Khaymah east of Sharjah on the Trucial coast, to Ras al-Misha'ab south of Kuwait, the best beds being between 5 and 10 fathoms. The most productive are located to the north and east of Bahrein Island; this is probably why Bahrein has been the pearl center of the Persian Gulf. However, Dr. A. E. Alexander, a leading authority on pearls who visited the banks in 1947, estimates that only 35 percent of the Gulf pearls come from around Bahrein Island; the remainder comes from the Trucial Coast and from the banks near Kuwait.

228 502 825 The success of any pearling season seems to be as unpredictable as the habits of the pearl oysters themselves; the oyster beds shift periodically so that their exact location is not known until the diving starts. Sometimes the pearls are plentiful and valuable, at other times they are neither. Sometimes a bank is sterile for several seasons; then the next it may yield all the highest quality pearls. None of the banks are charted; each *nakhoda* has his own knowledge of them and his own theories. Arab experts believe that the largest, most dense, and whitest pearls come from deep water, while shallow water yields only low density pearls tinted with some color. Some of the more pessimistic Arab observers claim that the Persian Gulf fisheries never yield over two first-quality necklaces in any one season.

¹⁰ Raymond O'Shea, *Sand Kings of Oman* (London, 1947), p. 133.

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THE PEARLING FLEETS

The bulk of the main pearling fleets sticks together, the Kuwait fleet moving down the coast while the Bahrein fleet moves up. The pearlers of the Trucial Coast follow the banks from Ras al-Khaymah to Qatar, a straight-line distance of over 400 miles. The Oman pearlers never go above Halyl Island; they work various areas around the islands in small fleets of 10 to 20 boats, the smaller vessels usually working the grounds nearest their home ports. A pearler assumes a position on the edge of a bank so that by paying out anchor line it will drift across the bank. When the divers begin to bring up only a few oysters, the boat is allowed to drift to a new position. After it has worked completely across the banks, the crew moves it back with the sweeps, to chants and drum beating. It is here that the true skill of the *nakhoda* comes into play — to keep his ship over virgin beds. When day ends the large ships stay on the beds and the crew settles down for the night; the smaller ships usually make for a protected anchorage.

Estimating the number of dhows and men employed in the Persian Gulf pearl fisheries is similar to estimating the population of the Arabian Peninsula. The published figures are largely based on Arab guesswork; most of them are probably much too high. Registers of a sort are kept in every town and port along the coast sending boats to the fisheries, so that figures do actually exist. But these are not published, and an accurate count would necessitate a survey of the whole long Gulf littoral.

In one of the earliest European references to pearling in the Persian Gulf, Niebuhr states that in 1763 the inhabitants of Kuwait lived by the fishery of pearls and fishes, and were said to employ more than 800 boats in these tasks.¹¹ Over half a century later, Wilson estimated that the pearl fishing boats on Bahrein amounted to about 1,500.¹² In a short account of pearling on the Trucial coast, Whitelock states that in the 1840's there were said to be something over 3,000 boats in the Gulf fisheries.¹³ Whitelock adds that the smallest boats had 5 men and the

¹¹ Carsten Niebuhr, *Travels Through Arabia* (Edinburgh, 1792), p. 127.

¹² D. Wilson, *op. cit.*, p. 285.

¹³ H. H. Whitelock, "An Account of the Arabs of the Pirate Coast," *Trans. Bombay Geographical Soc.* I (1844), pp. 42, 45.

228 largest about 18; but as the smaller boats were the more numer-
 464 ous, he used 9 as an average to arrive at a total of 29,000 men
 employed in the pearl fisheries.

Zwemer estimated the number of pearling boats out of Bahrein in 1896 as about 900, those out of Qatar as 200, and total number of boats as 5,000, employing 30,000 men.¹⁴ However, the figure of 900 does not seem to justify the total of 5,000; since Zwemer lived on Bahrein Island, the figure of 900 would seem to be the more accurate. Zwemer is apparently responsible for the figure of 5,000 dhows in the pearl fisheries which has appeared in print so frequently since: Villiers and Simpich state that there were 5,000 boats at the turn of the century, employing 80,000 men,¹⁵ while O'Shea states that in normal times there are about 5,000 boats employing 74,000 men.¹⁶

Evaluating these estimates and others not mentioned, one is led to the conclusion that there were never over 3,000 boats engaged in the Persian Gulf pearl fisheries, and probably not over 40,000 men. Taking the figures that may be considered as relatively reliable, we arrive at the following average for the fleet during the boom years:

Bahrein (Zwemer)	900
Kuwait	600
Qatar (Zwemer)	200
Eastern Arabian ports.....	200
Trucial coast (Whitelock).....	700
Persian ports (Whitelock).....	100
	2,700

This figure would seem to be a fair estimate for the size of the pearling fleet at the turn of the century, and if anything is on the high side

228 The first few decades of the present century were the last
 464 prosperous years that the Gulf pearl fisheries saw. Whereas, at
 178 the turn of the century there were almost 3,000 boats engaged
 in the fisheries, today there are hardly one-fifth that number. An

¹⁴ S. M. Zwemer, *op. cit.*, pp. 100-101.

¹⁵ Alan Villiers, *Sons of Sinbad* (New York, 1940), p. 373; Frederick Simpich, "Rise of the New Arab Nation," *National Geographic Magazine*, vol. 36 (1929), p. 388.

¹⁶ R. O'Shea, *op. cit.*, p. 132.

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estimate of the number of boats operating in 1946 would be as follows: 228

Bahrein	150
Kuwait	100
Darin, Qatif, Jubail.....	30
Trucial coast, Qatar, and Persian ports.....	250
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	530

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Manning these 500-odd craft were probably not over 10,000 men.

In Oman a strange balance of labor has been set up by the coincidence of the pearling season with the date harvest. Starting about June there is a migration of men northward from the Batinah Coast to the Trucial Coast; these men work the pearl fisheries. Some go north in caravans, others sail up in their *bedens* and other dhows. Opposed to the flood of men who make this temporary migration is a counter-migration of women who move southward from the Trucial Coast to the Batinah Coast; these women are hastening to the date groves for the date harvest. Often the women journey southward on the caravans which are returning from carrying the men to the Trucial Coast. Several months later, in September, the journeyers start the return home.

Bertram Thomas states that a considerable percentage of the army of men annually migrating northward to the Trucial Coast is composed of slaves.¹⁷ These Batinah contingents are usually accompanied by a tribal agent who enlists them with some pearling *nakhoda*. The slaves are the best divers, as they have been at it from youth; freemen usually work the ropes in Oman. Slave divers are noted for their lack of fear of diving into deep water or into muddy water containing weeds. So great is the need for labor in the Trucial pearleries that boats sail into the Gulf from as far away as Socotra to join the pearl fishing.¹⁸

Pearl fishing is a seasonal occupation, as the divers must wait for warm summer water before starting to dive. Probably few people realize there is a winter in the Persian Gulf, and that the water gets so cold that swimming for periods of over five minutes is extremely chilling. In Hasa Province it is not uncommon

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¹⁷ Bertram Thomas, *Alarms and Excursions in Arabia* (London, 1931), p. 251.

¹⁸ *Ibid.*, p. 143

228 for the minimum winter air temperature to be in the middle
464 forties; during this period the sea water temperature in shallow
132 water will be in the low sixties.

228 Pearl diving requires that the diver's body be almost continu-
147 ally in the water. From experience the Arabs have found that
464 the surface water temperature has to be about 85° F. before
132 continued deep-water diving is feasible; thus the main pearl-
ing season (*al-ghaws al-kabir*, or "great diving") averages four
months—from June into the first week of October. During this
time the maximum surface water temperature exceeds 90° F.
(in August) off Hasa. O'Shea states that on the Trucial Coast
al-ghaws al-kabir often lasts until late October, the water ap-
parently remaining warmer longer there than further north.¹⁹
In addition to *al-ghaws al-kabir*, there are two other seasons: the
"cold diving" season (*al-ghaws al-barid*) running from April to
May, and the *mujannah*, running from October to March. The
smaller boats run out in the shallower (warmer) waters for
al-ghaws al-barid and act as a barometer for the season, while
the *mujannah* is worked by waders who work along the shore
when the tide is out, many equipped with glass-bottom "look
boxes."

527 For *al-ghaws al-kabir* the various fleets, whether from Kuwait,
228 Bahrein, or the Trucial Coast, leave port en masse with flags fly-
ing, to the beating of drums and Arab chants. The few boats from
the smaller ports slip out without fanfare. It is a stirring sight
to see these fleets of dhows maneuver with their sweeps and then
set forth under huge spreads of lateen sails, with their freshly
oiled, burnt-brown hulls glistening across the aquamarine water,
like some ancient Phoenician or Roman fleet.

228 An admiral represents the pearl fishing fleet of each port. It
502 is the admiral's boat which leaves the port first, and the admiral's
duty to determine when the water becomes too cold for con-
tinuous diving. It is considered improper (by the owners) for
the *nakhoda* of any large vessel to leave the pearl banks before
the admiral leaves.²⁰

¹⁹ R. O'Shea, *op. cit.*, p. 137.

²⁰ The admiral of al-Khobar, Saudi Arabia, now works for the Arabian American Oil Company, for al-Khobar no longer sends vessels out to the pearl grounds.

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DIVING TECHNIQUE

The rights to the Persian Gulf pearl fisheries are jealously guarded by the Arabs, and these rights have been backed up by the British Government for over a hundred years. They are limited to the inhabitants of the Gulf littoral—Arabs and Iranians. Pearl diving in the Persian Gulf is carried on without the use of any professional diving gear; it is "skin diving." The British have prohibited drags, dredges, and compressed air diving suits or helmets, and there is a 30,000 rupee (\$9,000) fine for violation of the law. 228 656 685

However, in spite of this protection, foreigners have dived for pearls in the Gulf, and diving equipment has been used. In 1882 a Bombay syndicate sent a steamer, the *Johnstone Castle*, without official permission to the Bahrein banks. After five days the vessel was arrested by a British gunboat; its yield had been only 23 seed pearls.²¹ During the pearling season of 1935 some Italians employed by the Qusaibi Brothers, wealthy merchants of Hofuf, Saudi Arabia, used deep-sea diving suits.²² Presumably these merchants figured themselves exempt from British proclamations, inasmuch as they were Arabian nationals. But nothing more was ever heard of the venture, so it was either not a financial success or else the British brought pressure to bear against the practice. The Arab customs officials of both Saudi Arabia and Bahrein Island have been extremely suspicious of oil company divers, who spend a lot of time under water inspecting pipelines and piers, and they used to watch them through field glasses to see that they never brought up any oysters.

The maximum depth at which the divers work is about 12 fathoms.²³ Sweeps are left projecting overboard athwartships and are lashed to the tholepins and the deck. The divers' lines pass over the sweeps so that they will not become fouled. To get to the bottom a diver puts his foot in a loop of rope tied to a stone or iron weight, releases a slip knot holding the rope to the sweep, and holding onto the rope plummets down. The attendant pulls up the stone as soon as he feels it hit bottom. The diver holds onto 228

²¹ R. O'Shea, *op. cit.*, pp. 140-41.

²² K. S. Twitchell, *Saudi Arabia* (Princeton, N. J., 1947), p. 26.

²³ A. Villiers, *op. cit.*, p. 374; Hugh Smith, "The Pearl Fisheries of Ceylon," *National Geograph. Magazine*, 33 (1912), p. 174; R. O'Shea, *op. cit.*, p. 137.

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The diver holds onto

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another line to which is tied an open-weave palm leaf basket for the oysters; sometimes the diver has the oyster basket tied to his waist or around his neck and has the line tied to his body. When the diver is ready to come up, he gives several tugs on the rope. Thus the diver does not have to waste his valuable energy in swimming up or down. When he first reaches the bottom, he attempts to go out perpendicularly from the boat, frantically plucking all the oysters he can see before his air gives out. The diver usually crawls on one hand and one foot, using the other foot to propel himself and his free hand to collect the oysters.

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The divers wear a horn noseclip similar to a clothespin; this keeps the water out of their noses and enables them to hold their breath longer. Sometimes a diver will stuff cotton or beeswax into his ears to keep the water out. A set of leather finger thimbles protects his fingers from coral and other sharp objects; he wears only a loin cloth. This is the equipment universally used in the Persian Gulf, whether the diver is out of Kuwait, Bahrein, the Trucial Coast, or Persia. These divers wear no goggles and many have impaired vision from trachoma, so their efficiency is cut down considerably. It is strange that the Arabs have not added at least eye socket goggles, which the South Sea Island and Philippine pearl divers have eagerly accepted.

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Alan Villiers states that the Kuwait pearl divers make ten consecutive dives and then rest while a "substitute" makes ten; these two divers have the same attendant.²⁸ Divers in other parts of the Gulf work continuously, taking a rest all together at certain predetermined times, sometimes corresponding with prayer-time.

The diver stays under about a minute, then rests for two or three.²⁹ Ten dives would consume about three-quarters of an

²⁸ A. Villiers, *op. cit.*, p. 392.

²⁹ The average length of time that a diver stays under water has long been a controversial question. Alan Villiers (*op. cit.*, p. 392), who spent two months with the Kuwait pearling fleet, states that the divers averaged about a minute, ranging from 40 to 90 seconds. O'Shea (*op. cit.*, p. 157), spending some time among the Trucial coast pearlers, states that divers there remain under water from 40 to 75 seconds, also averaging about one minute. Whitelock (*op. cit.*, p. 43), who visited the Trucial coast pearl fisheries one hundred years ago, stated that the divers averaged about 40 seconds under water, but that he never saw them remain over a minute. Hugh Smith (*op. cit.*, p. 183) states that in the Ceylon fisheries the Arabs are the best divers, staying down from 60 to 75 seconds, with a normal maximum of 90 seconds, and that there is an authentic case of an Arab staying under 109 seconds in seven fathoms of water. In any

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hour, after which time the Kuwait diver is dragged out of the water and huddles in some spot on the ship looking more dead than alive. He may average four shifts a day, making a total of 40 dives; O'Shea states that under excellent conditions the Trucial divers average 50 dives a day.²² During this time he has spent almost one hour under water. Ten dives are not difficult, nor are 50 excessive in one day for anyone experienced; but day after day and week after week the diving goes on—for four months. When the season is over, the diver has weathered the impossible; he has probably completed over 3,000 dives in from 30 to 50 feet of water, and has spent over 50 hours under the surface of the Persian Gulf—that is, over a full forty-hour week without air, valiantly striving to gather all the oysters he can see through his blood-shot and irritated eyes, which become less sensitive with each dive.

Every ten days or so the divers do get a day of rest, and if the *shamal* is blowing they have to wait it out, as it roils the water. Occasionally they have to go ashore to bury a diver who fails to complete his 3,000 dives. It is not surprising that there are one or two empty stations on each boat; their occupants lie huddled corpse-like under their cloaks in some part of the ship, too sick from scurvy or plain fatigue to dive. After they have been at it for many weeks, the divers are apt to get convulsive shivers when they come out of the water for their rest, even though the temperature may be 110° F. and their tenders are covered with a lather of sweat. There are few, if any, white men who could endure just one day of such punishment; the Arab could not either except for his belief that Allah is merciful and that a Paradise awaits him.

Every dhow has to put in for water and food every three weeks or so. In recent years the pearling fleet has used the oil company's pier at Ras Tanura for water, but vessels have been known to replenish their water supply from some of the submarine springs which gush into the Persian Gulf. A diver goes down with an empty skin and opens it in the potable stream; he can bring up fairly fresh water by this means. One of these submarine springs,

case stories one hears about the amazing power of the Arabs to stay under water from 5 to 10 minutes or more are absurd.

²² R. O'Shea, *op. cit.*, p. 137.

[502] One of the [] submarine springs,

228 located a few miles north of Jubail, has been marked by a spar
312 buoy by order of King Ibn Saud.

228 O'Shea states that while the divers on the Trucial Coast are
165 rarely attacked by sharks, about 30 were attacked and two killed
around 1940.²⁷ Whitelock states that the Arabs claimed that the
danger of sharks was ever present, but that their worst fear was
from the saw fish, which had been known to cut divers com-
pletely in two.²⁸

228 Rihani writes that what the Persian Gulf pearl diver dreads
925 most is the *dawl*. However, he apparently does not realize what
136 the *dawl* is, merely quoting Sheikh Khalifah ibn Muhammad
al-Nabhani's *History of Bahrein*: "The *dawl* is a semi-fluid
animal, about the size of a man's hand, round in shape, with a
multitude of tendons about two feet in length, resembling a net-
work of silk. It has no power of locomotion, but is driven by the
waves and currents hither and thither. If it comes in contact with
the body of man, it burns it, leaving a deep scar; and if it is lifted
out of the water and left in the sun for five minutes, it dissolves."²⁹

The zoologist will immediately recognize this description of
the *dawl* as a jellyfish. It is in fact a small bell-shaped jellyfish
with two to three foot-long tentacles. The *dawl* swims at any
level and is practically invisible underwater; thus the divers
cannot keep away from the stinging tentacles, which will burn
the body and can put out an eye. Along the Ras Tanura pen-
insula, the *dawl* is most often seen near the surface shortly before
flood tides.

136 There is a species of needle urchin (*Diadema*) in the Persian
Gulf with spines from one or two feet long.³⁰ It is known that
these spines will produce nasty slow-healing wounds if bumped
into under water. This urchin may be the cause of some of the
open sores on the divers' legs, although salt water alone could
cause them, for the Persian Gulf has the highest salt content of all
the ocean bodies, and constant immersion in salt water is known to
produce a rash. However, as the *Diadema* is black and several

²⁷ *Ibid.*, p. 131.

²⁸ H. H. Whitelock, *op. cit.*, p. 43.

²⁹ A. Rihani, *op. cit.*, p. 230.

³⁰ *Diadema* was first reported from the Persian Gulf by this author: A. H. Clark and
R. LeB. Bowen, Jr., "Echinoderms of Saudi Arabia," *American Museum Novitates*,
No. 1390 (1949).

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feet in diameter, it is easily seen under water, and thus more easily avoided than the *dawl*. The Arabs have no fear of the sea turtle and they relate that when they find one of these on the pearl banks, they ride it to the surface by grabbing it behind the neck and directing it upward.

But the dangers from sharks and devilfish (rays) are slight compared to the physical danger resulting from simply driving oneself past the limit of human endurance. The "bends" are a common affliction among the divers and may cause severe pains in the joints, paralysis, or even death. Suppuration of the eardrums and rheumatism are also common. The divers may lose blood from surfacing too quickly or from staying under too long; Frederick Simpich tells of seeing a man come up from a 10-fathom dive bleeding at the nose as if someone had hit him with a ball bat.²¹ Whitelock states that the divers of the Trucial Coast were very emaciated and suffered from inflamed eyes, which they treated with antimony.²²

Divers never eat while working, except for a sip of tea or water, as food would cause nausea. When the sun has sunk so low that diving stops, they eat a few dates or a little rice and drink a little tea, but that is all. This is one of the reasons why they become so weakened and emaciated during a season. Sleep is the only energy builder the divers have.

OPENING THE OYSTERS

With dawn the first activity of the day is the opening of the oysters caught the day before. By this time the oysters have been out of the water long enough for their shells to open, so that one does not have to fight them. The oysters are not divided according to divers, but are simply piled in sacks on the deck, so that no one knows exactly who caught the one that may contain the great pearl. After the valves are parted, the openers knead through the flesh, extract any pearls, and throw the shells and the meat overboard. Less than one-third of the oysters yield pearls and these are mostly "seed pearls," those very small irregularly-shaped pearls which might well be called "pearl dust."

²¹ F. Simpich, *National Geographic Magazine*, vol. 36 (1919), pp. 369-93.

²² H. H. Whitelock, *op. cit.*, pp. 32, 44.

- 228 The captain watches the whole procedure closely to see that no pearls are secreted; when the last oyster is opened, he collects all the pearls, ties them in a small red cotton flannel cloth, and puts them in his sea chest on the poop deck.

The Persian Gulf procedure for opening the oysters is in vivid contrast to the practice of some of the other pearl fisheries. In Ceylon; for example, all the oysters for any one day are brought into the yards of the company holding the concession to the banks. Each diver carries his own oysters up to the stockaded compound where he divides them into three piles. The company inspector comes around and tells the diver which pile he can take; when he leaves the compound he has to give back a portion to his attendant and to the captain of the boat.

There is evidence that some such practice may have been carried out along the Arabian coast in the past. A century ago the pearlers of the Trucial Coast opened their oysters on land, for Whitelock²²⁸ relates that the pearlers remained at sea until they had a boatload of oysters and then proceeded to the nearest island to open the shells.²²⁹

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172 During medieval times the Arabians on the mainland controlled Bahrein Island; their capital was at Hofuf. Huge heaps of oyster shells, some a hundred yards long, stretch along the shore a mile south of al-Khobar. Nearby have been found grinding pestles, stone diving weights, and crude pottery fragments. The species of oyster in these mounds is the same small variety commonly found today. When the refinery at Ras Tanura was being built, a low hill was leveled by bulldozers. Cutting through many ancient graves they turned up a stone diving weight among the numerous bones and pottery. Between Jubail and Ras Tanura, several more ancient shell heaps have been located high on the beach. Some of these are composed *entirely* of the large plate-sized species of pearl oysters; now this species is found only occasionally.

MARKETING AND DIVISION OF PROFITS

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437 The majority of pearls are sold to Bombay merchants, but frequently brokers in search of a bargain will buy the best before

²²⁸ *Ibid.*, p. 42.

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the dhows leave the banks. These men wander through the fleet 228 in their own boats (usually launches) always trying to get to a 437 first quality pearl before the other brokers hear of it, and always hoping that the *nakhoda* will not recognize its value. The broker's paraphernalia consists of a magnifying glass, a small [413] hand balance, weights, and a set of brass screens for grading the pearls. When pearls are sold on the banks they are ceremoniously transferred from the captain's red bunting to the broker's.

Regardless of where they are sold, the majority of the pearls 228 go to Bombay, and from Bombay eventually to Paris, the world's 439 pearl emporium. Pearls are usually shipped to Bombay by air. 456 The reason is simple: Usury and insurance are prohibited by the 784 Quran. If the pearls were shipped to India by Arab dhow or steamer through an Arab agent, there could be no insurance on the consignment. However, if the pearls are shipped via Trans World Airline or British Overseas Airlines Corporation, the pearls can be heavily insured. Thus, the Arabs use a Western agency to get around the Quranic prohibition. In Bombay, Indian workers skillfully pierce the pearls with fine bow-driven drills and string them on silk, graded according to color and size. The pearls are sold to European dealers in bunches consisting of a number of strings and generally known as "Bombay bunches."

When the season has ended and the pearls are sold, the captain 228 deducts the cost of the food and provisions. What is left repre- 465 sents the profit. Of this the owner of the dhow gets one-half; of the remainder each diver and each attendant gets one share and the captain two. Most of the dhows leaving Saudi Arabian ports are small (not over 40 feet) with small crews—usually something like 6 divers, 4 attendants, and a captain. Thus, each diver and attendant would get one twenty-fourth (about 4 percent) of the profits, and the captain would get one twelfth (about 8 percent). The pearling dhows operating out of Bahrein and Kuwait are generally much larger than the Saudi Arabian dhows, and may have crews of 40 or more. The profits of these craft are split in much the same way as the profits on smaller dhows, but the captain gets more shares with these larger crews than he does with the smaller.

ECONOMIC RELATIONSHIPS

● 228 426 Pearling is a great gamble for everyone concerned. A share may be worth only 50 or 100 rupees if the take has been poor, but on the average a share should net at least several hundred rupees. It must be remembered that a share usually represents a year's earning, since the pearling industry operates on the "debt system." This is not to be confused with the "truck system," for the workers in the Persian Gulf pearl fisheries are not paid in produce. In the debt system the divers and tenders get actual cash advances during the seasons they are out of work, and their families get food and supplies while they dive. They must pay off their incurred debts with their earnings after the pearling season, but somehow they never seem able to get free.

228 426 b7d Until recently, a diver who accepted cash advances from a *nakhoda* had doomed himself to diving until death, and unfortunately death might not be an exit, as his debt was simply passed on to his son or brother, who then went on to incur his own debt. Once in debt a diver is prohibited from hiring to another *nakhoda*—he must repay his debt to the man who gave him cash advances. A diver or anyone else who accepts an advance in the pearling industry has sold himself to economic slavery, for the *nakhoda* owns his ability to work, while the man must support himself. Thus, a diver is bound to return to the purgatory of pearling at the *nakhoda's* call. Since Muslim law prohibits interest or usury the debt system effectively gets around this. The *nakhoda* is usually in turn bound to some merchant in the same way, for he has taken cash advances to give to his divers and attendants.

567 465 In Oman the *nakhodas* often hire their labor from a tribal agent, giving the agent an advance of money and rice. In the case of slaves, the agent takes this to the slaves' master; at the end of the season he collects the balance of the slaves' earnings. Thus the slaves' earnings go completely to his master, who in return clothes and feeds him.

228 656 426 On Bahrein Island the Bahrein Government has, at the suggestion of the British, effected many reforms in the pearling industry with respect to the debt system. Hereditary debts have been abolished; pearl divers on Bahrein now take their debts to

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their graves, and justly, too, for diving probably hastened their end. The Government demands that account books be given each diver and that they be kept up properly, and sends inspectors to see that they are. Before the season begins at Bahrein the amount of cash advances is agreed upon and proclaimed. The divers have put up a terrific objection to this limitation, for it seemed to them that they were simply getting less money. They could not understand that their debt was being lowered—in fact they did not care, for hadn't they always been in debt? 228
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There is a "diving court" which enforces the arbitrary laws of the industry, such as those dealing with engagement of labor, taxes, spurious pearls, etc. The court also disposes of any case of a *nakhoda* who cannot pay off his debts; the *nakhoda* may lose his boat and divers, but not his personal property. 228
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There has never been any noticeable effort on the part of the ruling sheikhs to better the lot of their subjects: if they were unemployed for long periods in the winter they would be sure to work harder during the pearling season to pay off their winter's debts. As the local sheikhs levy a tax on every boat and get a cut of some sort on the proceeds, the pearlery in a sense work for them. The sheikh thus always looked on the lack of other employment with favor, for if a man were happily employed as a farmer, fisherman, or herder there would be little incentive to enter the pearling purgatory. Under normal conditions the divers have an eight months' loaf during which time they live off their *nakhoda*; this is to the liking of both the diver and the *nakhoda*. 651
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However, many divers do find other work, as fishermen or mariners. The depression of the thirties hit the Persian Gulf pearl industry with great suddenness. Within a short period tens of thousands of pearlery in the Gulf found themselves without an occupation. The marine stock of Kuwait rose to the situation and gradually shifted to cargo hauling between Kuwait and Basra, Iran, India, South Arabia, and East Africa. Large ocean-going double-ended dhows have carried the fame of Kuwait seamanship throughout the Middle East, sailing to Africa on one monsoon and back on another. Kuwait oil operations have been drawing on this labor supply as well, so that nowadays the 463
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THE ARAB DHOW TRADE

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Negro origin, the descendants of slaves, though not now slaves themselves. Many others are of Iranian origin. Almost none are Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, the callings open to the low-class Iranian are restricted to portering, pearling (either as diver or as tender), and sailing. Both Iranians and Negroes work splendidly, are loyal, competent, and well disciplined.

As the *nakhoda* class is tied to the merchant by a structure of debt, so also are the sailors tied to the *nakhoda* class in the same way. All deep-sea sailing is paid for on a shares system, and there are no wages. Often the *nakhoda* of the deep-sea dhow has an interest in a pearling vessel (though not now to anything like the same extent as in former years), and the sailor may be bound to him through pearling debts, either his own or inherited. The more iniquitous practices in the pearling business structure have long been on the way out, largely because of the excellent example set at Bahrein, but the debt tradition stands and is almost impossible to eradicate.

The sailors go to sea because they know no other life, and they make a wretched living by incredibly difficult methods. They have no possessions other than the clothes they stand in, and one or two spare gowns, a good headcloth, and a few sarongs. Their toothbrush is the twig of a tree; their ablutions are made five times daily at a mosque well, or in the sea; they know no shelter and rarely have a bed. The younger seamen, I have noticed, often have no home other than the *sug*, or native bazaar, where they coil down in their rough cloaks for a night's sleep on a bench in a cheap coffee shop, or in the sand. At sea, they stretch out on the deck, beneath the stars, for there is no such thing as accommodation for the seamen or anyone else in most dhows. The officers and the more important merchants live on a bench round the wheel, in the stern of the ship; the seamen lie down anywhere.

What keeps the seaman a disciplined and more or less contented worker is his hope of reward, principally from smuggling or his own ventures, and his ambition to get hold of a tiny shop in the *sug* of his home town. This is an ambition he rarely achieves. His more usual fate is to die young, especially if he be

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000 also a pearl diver. Pearling from Kuwait and Bahrein is carried
 K on during the season of the hard southwest monsoon in the Indian
 MA Ocean, when the big dhows are laid up and there is no ocean
 228 sailing. It is therefore possible for the same men to carry on both
 callings, though in these days the seaman is becoming a little too
 enlightened to go off cheerfully to the purgatory of pearling.

MA The seaman is also helped by his religion, by his interest in the
 565 seafaring life (which has a great appeal of its own) and the fine
 581 camaraderie about it, and in many cases by the delights of night
 595 life in such ports as Zanzibar and Bombay. If he has no harem of
 his own back in Kuwait, he is certainly no celibate at Zanzibar.
 He generally seems to manage a small home in Kuwait after a
 few voyages, depending upon his own business acumen and the
 general success of the dhow he serves in. Many *nakhodas* appear
 to maintain several.

MA In addition to the merchants, *nakhodas*, and seamen, there is
 505 another class of importance in the dhow trade. These are the
 565 mates, the experienced officers who, never able to become
nakhodas themselves because of an unacceptable financial status,
 very often have more to do with the actual sailing of the dhow
 than the *nakhoda*. Each big dhow carries at least one such experi-
 enced man. Sometimes he is of Iranian origin, and has been sailing
 since he could walk. Sometimes he is a Negro, member of a trusted
 ex-slave family, who lives with the *nakhoda* at home or has been
 brought up in his courtyard.

MA He is always an able mariner, but he is not often trusted to
 505 trade. It is not at all uncommon for a *nakhoda*, on the usual East
 565 African voyage — which always begins with a long haul and
 439 long-winded peddling of dates round the coasts of Southern
 Arabia, and to Berbera and perhaps Djibouti — to leave the ship
 for considerable portions of the passage at sea, while he looks after
 her business interests ashore. For example, in one Kuwait dhow
 in which I had the good fortune to sail for some eight months, the
nakhoda cheerfully left the ship at Aden and went on to Mukalla
 by steamer, to steal a march on the other shipmasters and scoop
 the cream — he hoped — from the passenger market. Again, he
 left the ship at Zanzibar, and his mate took her down to the delta
 of the Rufiji, hauled her out on the beach at Kwale Island south

226 one in each hand (Fig. 9), he works the net around the edge of the stockade and empties the fish into palm-leaf baskets (Figs. 10 and 11). Most of the fish weigh less than a pound, but it is not unusual for a weir to yield many hundreds of pounds of fish in a tide change, though sometimes only enough are caught to feed the fishermen. The fish are usually sorted into two or three grades and are often sold on the spot. Several times I saw sharks as large as six feet trapped in the stockade; extracting these monsters was a delicate task. Most of the cuttlefish used as bait in the basket fishtraps come from these palm-stem fishweirs.

There seems to be a direct correlation between the amount of fish caught in a weir and the wind velocity, at least on the Ras Tanura peninsula. The Arabs can estimate their catch simply from the atmospheric conditions prevailing before low tide: if the *shamal*, the strong north wind, has been blowing, the haul is sure to be good.

I never saw the effect of the wind fail. In the fall jumbo shrimp, equal to any found in the Gulf of Mexico, are caught in these weirs. If there had been little wind, the catch would be small, but if the wind had been considerable, there were sure to be several dozen nice shrimp. The 10 weirs on the Tarut Bay side of Ras Tanura yielded at the most only several dozen shrimp, most of which came from two funnel weirs; the shrimp that appeared in local markets in large quantities came from the weirs on the flats around Qatif. The shrimp in Arabian markets is sun-dried, so that it can be stored and sold in any season.

As a rule, the men who work a fishweir get half the profits, and the owner gets the other half. The profits are figured by deducting from the gross return the cost of the workers' food and of the material required to maintain the weir. If a trap fails to produce, the owner sometimes supplies the tenders with cash, which must be repaid later.

In summer the daylight low tide in the Persian Gulf at Ras Tanura is about two feet higher than the minimum, in February. The water does not get low enough in the weirs to trap fish effectively, and the summer catch is therefore poor. Usually trap tenders are assigned to pearl diving and rock mining, possible only in the warmer months; one man is left to collect the small catch and keep the weir in condition. When Ramadan, the great Moslem fast month, falls in summer, the Arabs on Tarut Bay allow their fishweirs to fall into disrepair. It is surprising how fast a weir will disintegrate under even the slight wave action in a sheltered area such as Tarut Bay. In 1945 there were several strong shamals during Ramadan (then the last two weeks in July and the first two in August), which, coupled with the

[228 464] [Text continued on p. 393]

226 wave action, completely leveled almost all the 10 fishweirs on the Tarut Bay side of the Ras Tanura peninsula. All during the fishing season constant maintenance is necessary (Fig. 13).

226 Because of its shoal water, Tarut Bay is the only place along the Persian Gulf coast of Arabia where large fishweirs can be built, and one of the best 133 weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went 315 peacefully among the weir tenders and owners until 1945, when the Saudi 503 Arabian refinery project started in high gear. A deepwater oil-loading pier was built on the Gulf side of the end of the peninsula, and a huge pipeway was run from this pier to the refinery, some eight miles away. The pipeway passed close to several of the Tarut Bay fishweirs, and the considerable fill dumped into the bay changed the shore contour slightly

315 The Arab fishweir owners, ever alert to monetary opportunity, brought suits against the Arabian American Oil Company, asserting that the change 691 in contour had reduced their fish catches and that the company's grading- 226 equipment had damaged some of their weirs. After the refinery was partly 422 completed in October, 1945, oil was occasionally spilled into Tarut Bay and provided another complaint for the Arabs, who said that the oil contaminated their weirs. These complaints were such an annoyance to the oil-company executives that they instructed their agents to buy the fishweir [43] rights. By 1947 only three of the original 10 weirs were left; the total price paid was about 72,000 Saudi riyals (\$22,000). This money enriched the few Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras Tanura area the sale was an economic blow, for much of the fish supplied to Hasa Province came from the Ras Tanura traps.

ROCK MINING

228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. *Faroush* is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows² 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for *faroush* can be relatively dangerous: I saw a diver with

113 ² For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen, Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87-132. The dhows are usually 501 jalbuts (see Fig. 3 of the present article), but Bahrain and Kuwait send many *hums* and *sarabuks* to the pearl fisheries in addition to the jalbuts. A few small *sluvers* and *balloms* are also used by the fishermen (see Fig. 4 of the present article).

his great toe completely severed by a large piece of faroush that had slipped and hit his foot as he stood on the sea bottom.

Hasa, known to Americans familiar with native construction in Arabia as "sea rock," is found on the sea bottom in more or less solid deposits, from which a diver pries pieces (Fig. 15). Faroush is much more difficult to mine: it takes at least a day to get a boatload, whereas a crew may get three



FIG. 14—Author standing by slabs of faroush on the shore of Bahrain Island. Faroush is mined near Bahrain in much larger pieces than in Arabian waters. Pile of hasa in right background.

or four boatloads of hasa a day. Faroush is sold by the square measure, hasa by the cubic measure.

228 The rock divers, like the pearl divers, work only in the warmer months.
 464 Since they generally work in water that is shallower than the pearl waters
 461 and therefore remains warm longer, the mining season is two or three months
 longer than the pearling season, which is only four months. The rock divers
 do not work constantly, hour after hour, day in and day out, as the pearl
 339 divers do, since each boatload has to be sailed to shore. A small stock pile
 317 of faroush and hasa is always maintained in every seaboard town, and most
 of its buildings are constructed from these two rocks. Lime is made by burn-
 ing hasa.

426 The crews mining coral rock work on the "debt system," notoriously
 465 exploited in the Persian Gulf pearling industry. Although they are paid good

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wages, they are given cash advances and food during the winter and during slack periods. They never seem able to pay off their debts to the dhow owners.

PEARLING

The most colorful marine industry of the Persian Gulf is pearling.³ Pearling is definitely a seasonal occupation, confined to the months when

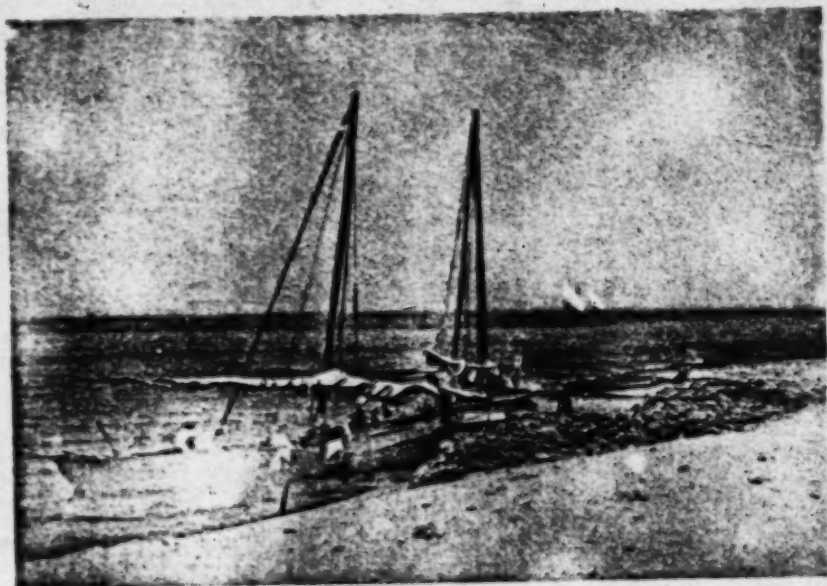


FIG. 15—Unloading bass from jilbuts on the Ras Tanura peninsula. Two loaded dhows in the background are bringing in more.

the water is warm. On the Persian Gulf coast of Arabia the minimum winter air temperature is in the middle forties, the shallow-sea temperature in the low sixties. From long experience the Arabs have found that they can begin deepwater diving in June and continue until the first week in October. At the start and finish of the season the surface-water temperature is about 85°, but the deep-water temperature is considerably less; the maximum surface-water temperature may exceed 100° in August. Before this main season the *ghaus al-kabir* (great diving), there is a season of about two months, known as the *ghaus al-barid* (cold diving), when smaller boats work the shallower waters near their home ports; during the winter many men go out as "waders" at low tide to pick up what they can just below tide level.

³ See also R. LeB. Bowen, Jr.: The Pearl Fisheries of the Persian Gulf, *Middle East Jour.*, Vol. 9, 1951, pp. 161-180.



FIG. 26—Emir Nasir of Dairin with a season's crop of pearls from his pearling jalloh.

Pearl oysters are found from low-tide level to 20 fathoms. There are pearl beds off the whole Arabian coast from Bahrein to Ras al Mish'ab, but the best banks are north and east of Bahrein Island, and the best beds between 5 and 10 fathoms. The beds are not charted; indeed, this would be useless, since they shift periodically. A bank may be sterile for several years and then suddenly produce the finest pearls of the season. The Arabs believe that the best pearls—the largest and whitest—come from deep water, though some of the more pessimistic say that the Persian Gulf never yields more than two first-class necklaces in any one season.

527 The pearling boats leave Bahrein, Kuwait, and the Trucial Coast of
502 Oman for the main season en masse to drum beating and chants, but the few dhows from the Saudi Arabian ports slip out unceremoniously. The Bahrein fleet works up, the Kuwait fleet works down, and the small Saudi Arabian fleet works in the middle.

The *nakhoda* (captain) of a pearling dhow orients his craft at the edge of a bed so that when the anchor line is paid out, the dhow will drift across the bed. When the divers start to get only a few oysters, the dhow is allowed to drift a little. When it is completely across the bed, the crew moves it back to a fresh location with the sweeps, to the accompaniment of drum beating and chants. It is here that the *nakhoda* shows his real skill and knowledge, for he must keep his craft in virgin water.

223 Pearl diving in the Persian Gulf is essentially "skin diving." The diver
292 wears only a loincloth and leather fingers to protect his fingers from sharp coral and shells; a horn noseclip and cotton or beeswax to stuff into his ears complete the "equipment." The use of drags, dredges, or compressed-air diving suits has been prohibited by the British, long the protectors of the Persian Gulf, and only the inhabitants of the Gulf—Arabs and Persians—can work the pearl fisheries.

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Each diver has two lines, one attached to a stone or iron diving weight; so that they will not become fouled, they are passed over sweeps left projecting over the gunwales athwartship and lashed down to the tholepins. The diver puts his feet into a loop over the diving weight (or simply lets the rope pass between his toes), releases the rope by untying a slipknot, and, holding the rope tightly, plummets to the bottom. As soon as he releases the line with the weight attached, the attendant hauls it to the surface. In the meantime the diver frantically plucks all the oysters he can before exhausting his air. He usually crawls on one hand and one foot, propelling himself with his free foot and collecting the oysters with his free hand. He puts the oysters into an open-weave palm-leaf basket fastened to his waist or around his neck, or hitched to a rope (which he holds or which is tied to his body). When he is ready to come to the surface, he jerks this rope.

The maximum depth at which the divers work is about 12 fathoms (72 feet). The average length of time they remain under water has been greatly exaggerated: some stories say 5 to 10 minutes. Villiers,⁴ who spent two months on a buyer's *jalbut* with the Kuwait fleet, states that the divers stayed under water from 40 to 90 seconds, averaging about a minute. O'Shea⁵ spent some time with the divers of the Trucial Coast, and he also states that the time averaged about a minute, ranging from 40 to 75 seconds. Hugh Smith⁶ observes that the Arabs are the best divers employed in the Ceylon fisheries, staying down from 60 to 90 seconds; he cites an authentic case of an Arab who stayed down 109 seconds in 7 fathoms of water.

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Ordinarily the diver remains under water for about a minute and rests for two or three minutes; on a good day he may make 30 or 40 dives, totaling half to three-quarters of an hour, and by the end of the season he may have completed more than 3000 dives in 30 to 50 feet of water.

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The diver's worst enemy is fatigue. He has little fear of sharks and, indeed, is seldom bothered by them, though O'Shea⁷ speaks of an attack on 30 divers, two of whom were killed under water. Whitelock⁸ states that the greatest fear of divers on the Trucial Coast is the sawfish, which has been known to cut divers in two. The creature most feared by the divers in the Persian Gulf, at least on the north banks between Kuwait and Bahrain, is a jellyfish known to the Arabs as the *dawl*, which has two- to three-foot

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⁴ Alan Villiers: *Sons of Sinbad*, New York, 1940, p. 392.

⁵ Raymond O'Shea: *The Sand Kings of Oman*, London, 1947, p. 137.

⁶ H. M. Smith: *The Pearl Fisheries of Ceylon*, *Natl. Geogr. Mag.*, Vol. 23, 1912, pp. 173-194; reference on p. 182.

⁷ *Op. cit.*, p. 138.

⁸ H. H. Whitelock: *An Account of the Arabs of the Persian Coast*, *Trans. Bombay Geogr. Soc.*, Vol. 1, 1844, pp. 32-49; reference on p. 43.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.⁸ This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164 Pearl divers suffer from a variety of diseases, most of which can be
752 directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 Divers never eat while they are working. When the day's diving is
461 finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualled at sea.

● 228 In recent years Ras Tanura has become a center of activity for the pearl-
312 ing fleet off its shores; for the oil company's installations can now pump an abundance of fresh water into the water tanks of the dhows much faster
502 than it can be transferred by waterskins. The larger vessels anchor for the night on the banks; the smaller vessels sometimes take shelter if it is available.
438 Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous
day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 Pearls are sometimes bought on the pearl banks by brokers who travel
442 around in their own boats trying to get the best pearls before other brokers
439 hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they

113 ⁸A. H. Clark and R. LeB. Bowen, Jr., Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, Amer. Museum Novitates, No. 1390, 1949.

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399

• 228 all end up in Bombay. The Indians drill, polish, and grade the pearls, and
442 string them on silk; these short strands are known as "Bombay bunches."
439 Before World War II the pearls were sent to India by steamer; today they
509 are usually sent by air from Bahrein, Kuweit, Sharjah, and Dharan. The
pearls are usually sold to Indian merchants in these towns, but occasionally
the Arabs themselves take the pearls to Bombay.

228 After all the pearls have been sold, the nakhoda figures out the season's
465 profit. The owner of the dhows gets half the profit; the other half is divided
among the crew. Most of the pearling dhows out of Saudi Arabian ports are
small (not more than 40 feet), with crews of ten -- six divers and four at-
tendants -- in addition to the nakhoda. Each diver and each attendant gets
one share in the profits (about 4 per cent); the nakhoda gets two shares,
unless he owns the dhow and longboat, in which case, of course, he gets
more than half the profit. The number of shares each of the crew, the
nakhoda, and the owner get is agreed on at the beginning of the season and
may vary from place to place. Many of the pearling dhows out of Kuweit
and Bahrein are considerably larger than those out of the Saudi Arabian
ports and may have crews of forty or more; on these the nakhoda gets a
larger number of shares.

Pearling is a gamble for everyone concerned, from the merchants to the
divers. Some seasons are good, some bad; sometimes a boat has bad luck,
sometimes excellent luck. A share on a pearling dhow should be worth
several hundred rupees, but it may not be worth fifty.

228 Usually a share on a pearling dhow represents a year's wages, since the
426 pearling industry operates under the "debt system" mentioned above (not
to be confused with the "truck system" of pearl fisheries elsewhere, in which
the divers are paid off in produce). Under the debt system the divers and
attendants are given cash advances during the winter season, when they are
not working, and their families are given food and supplies while the season
is on. The advances are deducted from their calculated shares, so that
usually the worker gets little or nothing.

Thus the divers and attendants are perpetually in debt. Once a worker
is in debt to a nakhoda, he cannot work for anyone else during the pearling
season; this is one of the laws of the industry. He has virtually sold himself
into economic slavery to the nakhoda, who has his services and never
actually has to pay him anything, whereas he in effect pays the nakhoda in
the pearls he produces. However, it should be remembered that the
nakhoda is in turn usually in debt to some merchant, who commonly
finances numerous nakhodas.

228 On Bahrein and in Kuweit the governments have made reforms in the
656 pearling industry. On Bahrein a pearl diver's debts now die with him; in
672 other places a diver's debts are passed on to his son or brother. The Bahrein
426 government also demands that account books be kept for each diver, and
the cash advances are agreed upon at the beginning of the season.

228 However, there has been a drastic change in the Persian Gulf pearling
industry. The great depression after World War I and the competition from
Japanese cultured pearls dealt the pearl fisheries a serious blow. Twenty-five
years ago there were nearly three thousand dhows engaged in pearling in
the Persian Gulf; today there are not more than six hundred. In the twenties
the east-coast ports of Saudi Arabia probably sent several hundred boats to
the pearl fisheries annually; today there are not more than several dozen.
In the twenties the value of the Persian Gulf pearl fisheries was more than
a million dollars; today it is less than a quarter of a million.

228 Thousands of divers and attendants were thrown out of work. In Kuweit
464 numerous pearlers found employment on sailing ships traveling to India
and Africa. On Bahrein Island many were absorbed by the rapidly expanding
oil industry. In Saudi Arabia oil development came late, and the un-
employed pearlers had already been absorbed as fishermen, rock miners, and
farmers; in fact, so well adjusted were the Saudi Arabian towns that when
the Arabian American Oil Company needed large amounts of labor in
1945, it had to hire Bedouins from the desert. Oil came late to Kuweit
also; however, here workers were drawn from the marine industries, since
the Kuweit Oil Company paid higher wages than the workers could get as
sailors, pearlers, or fishermen.

Oil has thus been able to offer salvation to the lowly coastal worker of
the Persian Gulf. A man in debt can now get a job with an oil company
and pay off his debt. So effective has this proved that the Kuweit, Bahrein,
and Saudi Arabian nakhodas have difficulty in getting men to send to the
pearl fisheries, or to man the sailing ships going to India and Africa. How-
ever, oil has yet to come to Oman, so that pearlers still leave the Trucial
Coast in large numbers, and many Oman dhows from Sur still sail down
to Africa.

THE DHOW SAILOR

228 However, a century before this, Kuwait was apparently noted more
361 for its pearl fisheries (which are still important) than for its maritime
505 trade, as Niebuhr related that in 1763

Kuwait is a sea-port town. . . . The inhabitants live by the fishery of pearls and of fishes. They are said to employ in this species of naval industry more than 800 boats. In the favorable season of the year, this town is left almost desolate, everybody going out either to the fishing, or upon some trading adventure.*

In Niebuhr's time, in the eighteenth century, the Omani sailors from Muscat and Sur on the Gulf of Oman were the famed Arab mariners, for Niebuhr related that

The inhabitants of Oman, although not fond of sea-fights, are nevertheless the best mariners in all Arabia. They have several good harbours, and employ many small vessels in the navigation between Jidda and Basra. To this last town there come annually fifty such vessels.†

In the middle of the last century Muscat was still an important maritime port, for in 1854 Osgood related that

Several ports in the Persian Gulf are tributary to it, and some excellent ships and a large number of [baghlas] employed in coasting and foreign trade, are owned by the Banian merchants at Muscat. In fact more than half of the trade of the Persian Gulf is carried on in ships owned at Muscat. . . . The trade with America, which is carried on chiefly by vessels from Salem does not exceed thirty-five or forty thousand dollars annually. Dates and cash are usually taken in exchange for American merchandise.‡

In the present day Muscat has completely fallen from its former prized position and given way to Kuwait and Bahrein Island in the Persian Gulf. However, the port of Sur in Oman still carries on the maritime tradition of the Omanis and maintains a considerable fleet of dhows which have long been prominent in the trading along the African coast.

501 The craft that make the trip down the African coast from Arabia are by no means all large ocean-going vessels; craft of all sizes and descriptions come into Zanzibar. Villiers* tells of seeing a 30-foot *jalbhut* from Oman sailing down the African coast. Having owned and sailed a *jalbhut* of about the same size in the relatively calm Persian Gulf waters, I have nothing but the utmost respect for anyone with the nerve to sail such a small open boat several thousand miles in the potentially rougher Indian Ocean.

113 * C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1799), II, 127.

† Ibid., 122.

‡ Osgood, *Notes of Travel* (Salem, 1854), p. 81.

* A. Villiers, SS, p. 190.

CHAPTER IV

PEARL DIVERS OF THE EAST COAST

A LONG the East Coast of Arabia are located the 228
largest pearl fisheries in the world. Pearl fish-433
ing has been the occupation of that part of 162
Arabia for many centuries. Probably a hundred thou-
sand Arabs are engaged in this hard and dangerous work
throughout the summer months. Half a million people
must depend on these divers for their livelihood. This
is not a large percentage of the inhabitants of Arabia,
but the pearl divers are worthy of consideration, for the
outside world has come into closer contact with them than
with any other Arab community in the entire peninsula.
As might be expected, the coast cities contain artisans, la-
borers, a few date gardeners, and merchants. These dif-
fer in no significant way from similar classes elsewhere.
The pearl diving community is unique.

Nothing can exceed the barrenness of the coast where 311
these men live. From Kuwait in the north to Ras el 433
Kheima in the south, a distance of three hundred miles, 312
scarcely a green thing is to be seen, except for a few
miles of date gardens at Katif and a smaller number at
Dibai. The water available for drinking is brackish and
almost undrinkable in many places. The inhabitants of
Umm el Qaiwain, one of these towns, "drink mud," to
quote the Arabs. The coast is so utterly unproductive
that all food must be imported, and in some places even
the fuel and drinking water.

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THE ARAB AT HOME

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438 All the cities along this coast north of Ras el Kheima
361 are diving communities, and some of them are quite large.

K Kuwait, the largest, has about fifty thousand inhabitants.

161 Kuwait has good harbor facilities, and the government of
228 the city has been notably efficient and strong-handed for

439 many years. A pearl diver may as well live in one coast

312 town as another, and so Kuwait has grown to be a large

262 city. The drinking water for this entire city is brought

in specially constructed sailing vessels from the mouth

of the Arab River in Mesopotamia sixty miles away.

The divers live on rice that is brought them from India,

on wheat that comes from Persia, and on sheep from in-

land Persia and Arabia. The only local product is fish.

The physical surroundings of all these towns are very

similar to those of Kuwait. The landscape is an un-

broken and monotonous expanse of sand on one side

and sea on the other. The heat in summer is ex-

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treame and the air is practically always moist, so that

for three or four months in the summer the climate is

almost unbearable.

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228 In the spring the diving community begins to hum
463 with activity. The boats are cleaned up and repaired.

New masts are put in and new rigging provided. As the

time for diving approaches, supplies of food and water

are taken on board. The divers collect from far and

near. Most of the population are divers, and in addition

many more come from a distance to dive for the season.

There are men from every district in Arabia and from all

over Mesopotamia; a few come even from the various

provinces of Persia. The place is filled with festivities

and good fellowship and hopes for a successful season.

M

228 The day for embarkation finally comes. The boats
501 are fitted with enormous sails, and also with a full com-

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228 plement of long heavy oars, so that they can be independent of the wind when necessary. One of these great diving boats moving out to sea is a sight long to be remembered. I once watched one of the largest Dibai boats leave for the pearl banks. During the winter these [504] boats are hauled up on the sand within a lagoon that runs through the city. The great boat moved majestically down this lagoon and out to sea. There were fifteen to twenty enormous oars on each side and each oar was manned by two divers. The oarsmen swung down the [461] lagoon with a stateliness that I have never seen surpassed, the men chanting as they worked, "*A billah mal, a billah mal,*" in a rhythm that had all the swing of a regiment off to war or a football team on its way to a game. There was a splendid silk flag flying at the stern, and the great ship went out to sea with every small boy in Dibai wishing he was on board. I felt the thrill of it myself, and the Baluch boy that I had with me as a medical assistant had hard work to keep both his feet on the ground. "Oh *Sahib,*" he said, "it makes me want to go with them."

228 However, once the pearl banks are reached, the work is hard and dangerous. The long oars are fastened in place so that they stretch out horizontally over the water and to each oar a rope is tied which carries a lead weight or a stone on its end. The diver stands on this weight as he descends, in order to get down quickly. Each diver has an assistant whose duty it is to haul up the weight as soon as the diver reaches the bottom, so that it may be ready for the next descent. There is a second rope which is fastened around the diver's waist. By this his assistant pulls him up when he gives the signal. This assistance is not necessary if the diving is in shallow

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228 water up to twenty feet, but when the depth is greater, as from fifty to seventy-five or even occasionally ninety feet, the help of the assistant is indispensable.

The diver puts something that looks much like a clothespin on his nose, takes a long breath and descends. He can stay under about two minutes, and in that time he walks around on the bottom picking up the oyster shells that he finds there and filling a small basket, which hangs by a cord around his neck. This basket is about the size of the crown of a hat. His forefinger is protected by a heavy fingercot, for often it is not easy to dislodge the oyster from its bed. When the little basket is filled, or as soon as he has been down for about two minutes, the diver gives his assistant a signal and is pulled to the surface. The shells are emptied on to the deck, the man rests a short time, and goes down again. This work is kept up with little or no intermission until sunset. Nothing is eaten in the morning, and nothing throughout the entire day. The Arabs say that it is impossible to dive except on an empty stomach, and the men take nothing except a little coffee perhaps, and on occasions a date or two. At sundown they have prayers, and after that come a substantial meal and time to sleep.

The diving has resulted in a pile of oyster shells, which is large or small depending on the day's success. The following morning the first item on the program is opening these shells and finding any pearls that they contain. The men sit in two rows, a row on each side of the little ship, and a small pile of shells is placed in front of each diver. They squat cross-legged, encumbered with little clothing, and the captain sits high up astern where all of the men will be under his eye as they work. The shells are opened with a thin flat knife, and the diver very

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deftly searches in all the different places where experience 228^o
has taught him to look for the small glistening things
that bring such a high price in the world's market. It
is almost impossible for any one to conceal a pearl as he
works. He has scarcely enough clothing for such a pur-
pose, and the watchful eye of the captain is hardly off
him for a minute. When a pearl is found, if it is small,
as most of them are, it is wiped off on to the big toe or
the thumb of the diver. As the work progresses, some
of the men will have quite a row of little pearls extending
perhaps the whole length of their big toe, to which they
adhere because they are damp. As soon as the number
of these little pearls is sufficient or a really large pearl
is found, everything is taken to the captain, who care-
fully puts all the pearls in a little bag made of red
flannel and keeps them safe. When this work is com-
pleted, the diving of the day begins. The delay caused
by the search for pearls in the catch of the previous day
is not usually more than from half an hour to an hour.

The skill required for the labor is small, and outsiders 228
have little difficulty in qualifying as divers even with no 464
previous experience. Stories are told of Bedouins from
the desert, who have never learned to swim, starting
nonchalantly to dive with the more experienced men.
Men of this sort usually get along all right. Occasionally
they drown. Boys sometimes start out even at the age
of ten to work as cooks and minor helpers, receiving at
first a small fixed wage. Later they are promoted to the
position of assistants and soon are divers if they so desire.
The work, although it calls for little skill, does require
much courage and nerve, and to be a really successful
diver a good degree of aptitude and energy is essential.
The energetic diver who has at the same time a con-

- 228 tagously cheerful spirit is prized highly and receives
464 extra good treatment. The season's success, however, turns only partially on the energy and skill of the men.

228 The fluctuations of the market are pure chance as far as the men are concerned, and the success of the catch is an equally incalculable factor. The weather has also to be considered, for in storms it is impossible to dive, and the "forty-day northwest wind," so called, is likely to take a large number of days out of the working calendar.

The pearl banks stretch for miles and miles in the shallow waters of the Persian Gulf. Occasionally pearl-bearing oysters may be found where the water is so shallow that the very low tides of the first and middle of each lunar month leave the bottom of the sea quite uncovered. However, most of the diving is done in water that is at least four fathoms or twenty-four feet deep. Deeper than fifteen fathoms, that is to say ninety feet, no one dives, and the Arabs insist that at greater depth no pearl-bearing oysters are found. Any rocky bottom between these two limits of depths is suitable territory in which to hunt for pearls. Certain banks are noted as affording good hunting, but most of the season's fishing partakes largely of the nature of exploration and guesswork, trying here and trying there in localities where the catch is reported as good. The number of diving boats at work is large, but the territory available is vast and there is no crowding. The banks are scattered along the Arabian coast of the Persian Gulf for perhaps three hundred miles, so the opportunity for each boat is ample.

[123] These banks are as free as the air. No one exercises any control over them, nor claims the privilege of charging rent for their use. The nominal tax of a diver's share

Maritime Arabs Mk2
Kuwait MI 1

Bahrein MZA

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The nominal tax of a diver's share taken from each Kuwait boat by the Sheikh of that city is simply a tax collected from his citizens. The Bahrein Sheikh collects a small fixed charge from each boat, the amount depending upon the number of men it carries. The Persian Gulf is a British lake as far as police service is concerned, and the British administrators with their usual common sense and practical benevolence have forbidden the introduction of diving bells and dredges. As a result, the banks are worked solely by native boats. By the use of machinery and dredges, diving bells, and the like, undoubtedly the banks could be cleaned out in a few years with large profits to a few individuals, but it would mean the destruction of the whole diving community. The divers have much for which to thank Great Britain, although they do not realize it, much less appreciate it.

About five months are spent in the actual work of diving. Every three weeks or so the boat returns to the most convenient harbor to take on fresh water and food and to have the boat's bottom scraped. With these short intermissions the work is continuous throughout the entire season. The work is officially closed by order of the local sheikh on a certain day, so that the greedy captains cannot keep their men diving in water too cold to be safe. The captain then takes the season's catch to some pearl merchant, and sells it for whatever the market affords.

Not only are the pearl banks a free preserve maintained by the British for the Arab divers, but the markets where the pearls are sold are equally free. The Oriental is particularly unscrupulous in manipulating markets, and in India it sometimes happens that in spite of all the government can do, or at least in spite of all it feels at liberty to do, corners in food stuffs are engineered with sufficient success to bring much profit to the dealers and much suf-

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turned from four months or more of exhausting work, ⁴⁶⁵
during which time they have been half starved and have ⁵¹⁷
had no opportunity of finding enjoyment and pleasure,
legitimate or otherwise. The result ¹ is precisely what ⁴³⁵
might be expected. Persian rugs in the bazaar go up ⁵¹⁷
to twice their proper price as does anything else that the
divers may fancy. Meat reaches the highest price of the
year, and the same is true of fish, which food the divers
enjoy above everything else. Gambling is all but uni-
versal. Immorality flourishes. This state of affairs
lasts a month, perhaps two months. Then things gradu-
ally settle down into the regular winter stagnation until
the next diving season.

The same thing happens on a smaller scale when the ⁵¹⁷
season opens. Advances are made to the men. Feasts ²⁸²
are held. There is much good fellowship and coöpera- ⁴⁶⁵
tion as the preparations for the season are completed.
The chanting of singers can be heard late into the
night. The money advanced by the captains makes a
great show as it is spent. Strangers come in from far
and near to go out and dive with the local men, and the
city wears such a gala appearance as it scarcely puts on
again till the next season.

It is thus that an astonishingly attractive tinsel surface ⁵⁶⁵
is maintained over an industry and a manner of life that ²²⁸
even for Arabia are bitterly sordid and exhausting. The
pearl diver's life is one of poverty, hard and cruel. In a
bad season it is with difficulty that he gets enough to eat.
His lot is distinctly worse than that of the date cultivator.
Diving wrecks the health as no other Arabian occupation ²²⁸
wrecks it. The high pressure of the water at great depths ¹⁶⁴
frequently bursts the ear drums, and it is a safe con-
jecture that no community of equal size anywhere can show
[of divers returning with their wages -- Analyst]

THE ARAB AT HOME

228 such a number of chronic running ears. The lungs are
164 often affected, and all along the diving coast pulmonary tuberculosis is common. This is not remarkable when we know that in the opening days of the season the men frequently dive in water that is so cold that they spit blood. Many return from their summer of semi-starvation and unsuitable diet of rice and dates with their gums sore and bleeding from scurvy.

Living conditions in the community¹ are what might be expected. Disease is common. The death rate is high.
511 Poverty is universal. In good years the standard of life is none too high. In bad years it is reduced almost to the starvation point. During a hard year the food of the divers is poor in quality and scanty in amount almost to the degree of partial starvation. They usually live in date-stick huts, and in the winter must frequently shiver in unwarmed houses because they have no money for fuel.

M In such communities there is little or no interest in
871 education. A diver has reason enough, one might suppose, for wanting to know how to read and write and
212 keep his own accounts, but it is rare that one of them knows as much as that, and apparently it is equally unusual to find one who is trying to educate his children so
[M] that they may escape the slavery that binds him. The
1868 boys are frequently taken out to learn pearl diving while
B they are still under twelve. In Bahrein the American
571 Mission has tried for many years to develop educational
185 work of an elementary sort, but has found it practically
658 impossible because there is no demand for such things. The considerable Persian community in the city has made efforts from time to time to establish educational work for its own boys. The Persian schools exist for a little
[of pearl divers -- Analyst]

721 Political troubles became acute some ten years ago or more, and for many years no foreigner was allowed to land on that coast. It was a double pleasure, then, to be invited to visit that part of Arabia four years ago. It is the one remaining nest of slavery in eastern Arabia and the district is still troublesome at times to the bearers of constituted authority, but nothing of that sort is apparent to the visiting doctor. The rich and the poor alike are most courteous and pleasant hosts.

- 228 In this district the pearl-diving system is the same as 461 in Bahrein, but the men do not work nearly so hard. They set out to work later in the season, although if the temperature of the water were the only element in their decision, they might be at work sooner, for they lie farther to the south and their water warms up considerably before that near Bahrein. They return to the shore oftener and show much less energy in their work. The pearl banks in the region of the Pirate Coast are less rich than the Bahrein banks, and as might be expected, their catch is much less valuable than that of the boats farther north. It is interesting to see that divers on the Pirate Coast live at about the same general level as those in Bahrein. They could not live at a much lower level, for it would mean starvation. The larger receipts in the Bahrein area have as their only result the creation of a much richer class of pearl merchants than the similar class on the Pirate Coast.

527 Unquestionably it is the slaves who have reduced the 464 standards of what a day's and a season's work ought to be to its present level on the Pirate Coast. Most of these 461 slaves are negroes from Africa. A few are Baluchs from the Makran coast between India and Persia. They do not number over one-half the divers, probably far 21 The Pirate Coast and its capital at Dubai -- Analyst

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during which time they have been half starved and have ⁵¹⁷
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[of divers returning with their wages -- Analyst]

S.A.
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Typical date palm garden in the oasis town of Hofuf.

M.A.
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Pearl diver with nose-clip preparing to dive beside a pearling dhow.



Unknown burial mounds dating back to ancient times near Awali—Bahrain Island.

M.A.
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p. 29 (b)